Impact of COVID-19 pandemic on colonoscopy results – an overview

Emre Bozdağ, Erkan Somuncu, Adem Özcan, Elif Gökçe Devecioğlu, Selçuk Gülmez, Mehmet Abdussamet Bozkurt

Authors' Contribution: Article history: Received: Accepted: Published:

ABSTRACT:

Aim: Colorectal cancers are common cancers. Colonoscopy procedure, which is applied in the early diagnosis and treatment of this disease, has a very important role. In this study, we aimed to examine the effect of the COVID-19 pandemic period on our colonoscopic procedures.

Material and methods: In this observational study, the data of the patients who underwent colonoscopy in our General Surgery Endoscopy Unit, between March 11, 2019 and March 12, 2021 were scanned retrospectively. Patients under 18 years of age were excluded. The patients were divided into two groups. Group patients between 11 March 2019–11 March 2020; patients in the pre-COVID-19 period, Group 2, on March 12, 2020–March 12, 2021; Grouped as the COVID-19 era.

Results: Data of 8285 patients were analyzed. A total of 4889 patients in Group 1 and 3396 patients in Group 2 were included in the study. The detection of precancerous polyps between the groups was found to be significantly higher in group 1 (p < 0.05) (4.3% vs 2.1%). Similarly, the presence of precancerous polyps over the age of 65 was found to be significantly higher in the pre-covid group. In group 1, no significant difference was found in the evaluation of cancer patients according to gender (p > 0.05) (F/M: 1.2%/1.6%). In group 2, cancer patients were found to be significantly higher in males.

Conclusions: The COVID-19 pandemic has had negative effects in many areas, as well as on our colonoscopic procedures. Experienced centers continue to work to minimize these negative effects.

KEYWORDS: colonoscopy, colorectal cancer, COVID-19, polyps

ABBREVIATIONS

COVID-19 – coronavirus disease 2019
CRC – colorectal cancer
ESGE – European Society for Gastrointestinal Endoscopy
GI – gastrointestinal
IQR – interquartile range
SARS-CoV-2 – severe acute respiratory syndrome coronavirus 2
WHO – World Health Organization

INTRODUCTION

Colorectal cancer (CRC) is one of the most common cancers globally. According to the GLOBOCAN database of the World Health Organization (WHO), colorectal cancers are the third most commonly diagnosed cancer in men and the second most common cancer in women. Early diagnosis and treatment play a significant role in the clinic course of this potentially fatal disease. Colonoscopy is the most accurate and multi-purpose diagnostic test for CRC; it can be used to detect lesions in the large intestine, simultaneously take biopsy samples from these detected lesions, and remove polyps [1].

After the appearance of the new SARS-CoV-2 virus, the WHO declared COVID-19 to be a pandemic on March 11, 2020 [2]. During the COVID-19 pandemic, various modifications in endoscopic practices were seen from country to country and within specific clinics. The specialized care of infected patients requiring hospitalization and mechanical ventilation has significantly changed the routine clinical practice in health care facilities, including endoscopy units [3–5]. As gastrointestinal (GI) endoscopy presents a high risk of transmitting SARS-CoV-2 among healthcare workers [6], the European Society for Gastrointestinal Endoscopy (ESGE) recommended that elective procedures be delayed or prioritized based on COVID-19-related morbidity/mortality [3].

This study aimed to compare the colonoscopic procedures performed during a 1-year period during the COVID-19 pandemic with a non-pandemic period one year earlier. We also investigated the effect of the pandemic on the activity and detection of precancerous lesions.

MATERIAL AND METHOD

In this observational study, we retrospectively scanned the data of patients who underwent colonoscopy in our General Surgery Endoscopy Unit at the University of the Ministry of Health, Istanbul Kanuni Sultan Süleyman Training and Research Hospital between March 11, 2019 and March 12, 2021. Patients under 18 years of age were excluded. The patients were divided into two groups: Group 1 – pre-COVID-19 period, patients presenting between March 11, 2019 and March 11, 2020; and Group 2 – COVID-19 era, patients presenting between March 12, 2020 and March 12, 2021. A total of 4889 patients in Group 1 and 3396 patients in Group 2 were included in the study.
Invasive cancer was detected in 97 patients, which comprised 1.1% and 1.2% of the groups, and intramucosal carcinoma in 13 patients, which was 0.3% and 0.2%. In the statistical analysis, no significant differences were found between the groups in terms of cancer frequency (P = 0.917). The detection of precancerous polyps between the groups was found to be significantly higher in Group 1 (P < 0.05) (4.3% vs. 2.1%). Similarly, the presence of precancerous polyps in those over the age of 65 was significantly higher in the pre-COVID-19 group.

In Group 1, no significant differences were found in the evaluation of cancer patients according to gender (F/M: 1.2%/1.6%; P > 0.05). In Group 2, cancer rates were significantly higher among the men. There was no difference between the two groups in the number of applicants over 65 years of age. There was no significant difference between the two groups regarding cancer frequency. There was no significant difference between the two groups in cancer detection rates ≥ 65 years. The demographic and pathological data of the patients are presented in Tab. I.

**DISCUSSION**

In our study, colonoscopic data in a single tertiary care center were examined. As in endoscopy units all over the world, precautions were taken to ensure compliance with the pandemic-related precautions during the COVID-19 period. One such measure was to...
restrict procedures within limited indications [3]. While the endoscopic procedures performed on the patients during this period were canceled in most centers, they were performed in tertiary centers with more limited indications. After the WHO declared COVID-19 a pandemic in March, a significant decrease was observed in the number of endoscopies, especially in the first 3 months [7–11]. In France, Meyer et al. [12] reported a decrease of 85.6% in the first 6 months of closure. However, towards the end of the restrictions, it was observed that the capacity had reached pre-pandemic values, according to one study [13]. The activity rate of our endoscopy unit in these first 3 months was 7%, which was compatible with similar studies in the literature [10]. In the 1-year evaluation, it was observed that the activity of our unit had decreased by 31% compared to the previous year.

The effectiveness of screening in colorectal cancers has been well defined [14]. The main types of these scans are fecal immunochemical test and colonoscopy. There is no consensus regarding when colonoscopy should be performed in patients with a positive result in the first fecal immunochemical test [15]. In a consensus published by the Canadian working group in 2006, it was recommended that should occur within 2 months without any reason [16]. Similarly, European guidelines recommended a period of 31 days in 2012. During the pandemic, it was observed that the restrictions and the fear of being infected by patients delayed gastroenterological interventions [17, 18]. This situation manifested itself as a decrease in the number of colonoscopies. While planning our study, we predicted that this expected decrease would cause delayed diagnosis and treatment. Indeed, a similar situation was observed in our endoscopy unit. During this period, we were unable to identify patients with colorectal cancer due to the significant decrease in the number of endoscopic evaluations. This, in turn, caused a delay in the diagnosis and treatment of CRC patients during the first wave of COVID-19. As a matter of fact, a recent modeling study has shown that a delay of 3–6 months in cancer patients has a significant effect on survival, especially in stage 2 and 3 tumors [19]. In their study, Gupta et al. [20] stated that delayed colonoscopic procedures in this period would result in tumor progression, increased morbidity, and a rising need for expensive treatment. In our study, although there was a significant decrease in the number of procedures, there was no significant decrease in the incidence of cancer. This is because, as far as we have observed, local hospitals generally suspended their endoscopic procedures, while our hospital was a referral center for these procedures. As a result, patients from an external center were evaluated by healthcare professionals according to the urgency of the symptoms and the presence of alarm symptoms (weight loss, anemia, changes in defecation, etc.) and were referred to our unit. Thus, despite the decrease in the number of precancerous patients during the pandemic, we think that the consistency in the number of cancer patients detected is due to this situation.

Another potential difference in our study was full COVID-19 restrictions, which applied to people over 65 years of age different than other countries, had a negative effect on the number of colonoscopies. However, in our study, we could not detect a significant difference between the two groups when the numbers of applicants over the age of 65 in this period were compared, a fact which supports our hypothesis. Moreover, what we did find during the COVID-19 pandemic was a higher cancer rate among men. Since this result may be due to dependent variables (environmental or societal conditions, etc.), the underlying reason was not investigated in our study.

CONCLUSIÓN

In conclusion, as in the whole world, the COVID-19 pandemic adversely affected the number of colonoscopic procedures performed in our endoscopy units. Although this negative effect could not be shown significantly in the number of cancer patients, the decrease in the number of procedures and in the number of patients with precancerous polyps suggest that the diagnosis and treatment of cancer patients were delayed during the COVID-19 pandemic. Since our study includes data from a single high-volume center, a wider multicenter data set should be obtained.

REFERENCES

The authors declare that they have no competing interests.

The content of the journal „Polish Journal of Surgery” is circulated on the basis of the Open Access which means free and limitless access to scientific data.

This material is available under the Creative Commons – Attribution-NonCommercial 4.0 International (CC BY-NC 4.0). The full terms of this license are available on: https://creativecommons.org/licenses/by-nc/4.0/legalcode

Emre Bozdağ MD PhD (ORCID: 0000-0002-2729-1667); Department of General Surgery, Kanuni Sultan Suleyman Training and Research Hospital, University of Health Sciences, Istanbul, Turkey; Atakent Mh. Turgut Ozal Blv. No: 46/1 34303 Kucukcekmece, Istanbul, Turkey; Phone: +90 5555839689; E-mail: emrebozdag1923@hotmail.com

Cite this article as: Bozdag E., Somuncu E., Ozcan A., Devecioğlu E.G., Gulmez S., Bozkurt M.A.: Impact of COVID-19 pandemic on colonoscopy results – an overview; Pol Przegl Chir 2022; 94 (4): 1-4; DOI: 10.5604/01.3001.0015.7299